

2.0 PROJECT OBJECTIVES

2.1 Mission Statement

The mission of the Marine Corps Embassy Security Group is to “provide protection to mission personnel and prevent the compromise of national security information and equipment at designated diplomatic and consular facilities...” P707 supports MCESG training and troop housing needs.

The mission of MCESG/MCB Quantico Bachelor Housing is to provide the best quality of life possible for assigned military personnel by building and maintaining comfortably furnished bachelor enlisted quarters (BEQ) facilities. The goal is to achieve consistency throughout the Marine Corps with facilities that promote professional development, support unit cohesion, and improve the quality of life for all enlisted personnel.

2.2 Facility Function

The function of the MSAU HQ-BEQ “2+0 room” is to provide unaccompanied military personnel with adequate, comfortable housing. This is a major goal for the Marine Corps, and a critical element in attracting and retaining high-caliber personnel.

The function of the MCESG Annex will provide adequate and usable space for their day-to-day operations and specific training needs for their mission and required duties.

2.3 Project Specific Priorities

The Concept Design drawings for the P707 MSAU HQ-BEQ and the MCESG Annex, included as attachments in Part 6 of this RFP, are intended to show room adjacencies, to demonstrate a “test fit” of the required spaces and general conformance to the building program and architectural requirements for the buildings’ designs. The Design Build Team will be required to confirm final program space requirements with the user, and to verify compliance with FC 4-721-10N (1 November 2012; Change 5, 22 January 2015), *Navy and Marine Corps Unaccompanied Housing*.

2.3.1 Sustainable Design and Construction

Design and construct the project per sustainability requirements identified in Section 01 33 29.05 20, *Sustainability Reporting for Design-Build*. Additional specific sustainability requirements are found in Parts 2, 3, and 4 of this RFP.

Design and construct project per UFC 1-200-02 High Performance and Sustainable Buildings.

Integrate sustainable strategies and features into the design to minimize the energy consumption of the facilities; conserve resources; minimize adverse effects to the environment; and improve occupant productivity, health, and comfort to reduce the total cost of ownership of the project using a whole building, life-cycle approach. In accordance with Engineering and Construction Bulletin 2011-01 and other directives, the facility and all site features shall be designed and constructed using USGBC LEED-NC v4. The design and construction shall incorporate sustainable design

strategies and features to the fullest extent possible, consistent with mission, budget, and client requirements.

Sustainable design rating level for the project is to achieve LEED-NC Silver v4 and the constructed facility shall be certified by the USGBC as having met the USGBC LEED-NC requirements for the required rating level.

The following USGBC LEED-NC v4 credits and additional sustainability requirements are mandatory.

- a. SS Credit: Rainwater Management
- b. SS Credit: Heat Island Reduction
- c. WE Credit: Outdoor Water Use Reduction
- d. WE Credit: Indoor Water Use Reduction
- e. EA Credit: Optimize Energy Performance. In addition to achieving points associated with the LEED credit for new construction, achieve a 30% energy use reduction below ASHRAE 90.1 (2010) in accordance with the Energy Policy Act of 2005 (EPACT 2005). Reduction shall be calculated in accordance with US Code of Regulations 10 CFR 433, 434, 435 dated Dec. 4, 2006.
- f. EA Credit: Enhanced Commissioning
- g. EA Credit: Advanced Energy Metering
- h. EA Credit Enhanced Refrigerant Management. Reduce use of Ozone Depleting and Global Warming Compounds. Eliminate the use of ozone depleting compounds during and after construction where alternative environmentally preferable products are available.
- i. MR Credit: Building Product Disclosure and Optimization – Sourcing of Raw Materials
- j. MR Credit: Building Product Disclosure and Optimization – Material Ingredients
- K. MR Credit: Construction and Demolition Waste Management: Divert 50% and Three Material Streams from Disposal.
- l. EQ Credit: Construction Indoor Air Quality Management Plan
- m. EQ Credit: Indoor Air Quality Assessment
- n. EQ Credit: Low-emitting Materials. Specify materials and products with low pollutant emissions, including adhesives, sealants, paints, carpet systems, and furnishings.
- o. EQ Credit: Thermal Comfort. Design to ASHRAE Standards 55-2010 for Thermal Comfort

- p. Moisture Control. Establish and implement a moisture control strategy for controlling moisture flows and condensation to prevent building damage and mold contamination.
- q. Bio-Based Products: For USDA designated products use products meeting or exceeding USDA's bio-based content recommendations.
- r. Energy Efficient Products: All energy-using products shall either be Energy Star or achieve FEMP recommended efficiency benchmarks. Where Energy Star or FEMP recommendations have not been established, efficiency shall be in the top 25% for the type of product procured. All energy using products shall also meet FEMP requirements for low standby power consumption.

The following LEED v4 credits are not applicable to the project and must not be used by the Contractor to obtain the LEED certification.

- a. EA-Credit Green Power and Carbon Offsets

Ensure sustainable strategies and features in the design phase are incorporated in the construction phase. The following strategies may not be used by the Contractor to obtain LEED certification.

- a. Pervious Concrete
- b. Green Roof
- c. Grey Water Reuse

2.3.2 Storm Water Management - Low Impact Development (LID)

Provide a design that incorporates low impact development strategies complying with UFC 3-210-10 (1 July 2015), *Low Impact Development*. If a project has a footprint (consisting of building, sidewalks, and parking) of over 5000 square feet and does not maintain the predevelopment hydrology to the maximum extent technically feasible (METF), these constraints must be documented on the NAVFAC Sustainable Energy Data Record Card (NSEDRC) and approved by the Government's Civil Technical Discipline Coordinator. The NSEDRC can be found at http://www.wbdg.org/pdfs/navfac_sustainable_energy_data_record_card.pdf.

These policies are in addition to state or local stormwater management program permit requirements. The DOR must balance all requirements, Federal, state, local and the above stated policies, and acquire required regulatory permits when managing storm water generated.

Comply with Navy LID Policy (commonly referred to as the Penn Memo). The Navy LID policy sets a goal of no net increase in storm water and sediment or nutrient loading from major construction projects (defined as exceeding \$750,000). If LID is not implemented to the METF as defined in UFC 3-210-10, a waiver must be obtained from the Regional Engineer. Coordinate waiver review and approval with the Government's Civil Technical Discipline Coordinator (TDC).

2.3.3 Energy Efficiency

Energy efficiency must be in accordance with UFC 1-200-02 (1 March 2013; Change 3, 7 November 2014), High Performance Sustainable and Building Requirements.

Thermographic Inspection

Infrared Thermographic testing shall be performed on the entire building envelope. The results of this testing are to be interpreted for 1) locations where the insulation is missing or defective, 2) Locations of leaks in the air barrier, and 3) Locations of moisture intrusion. This testing shall be done in accordance with ASTM C1060-90. The operator shall have completed a Level One training course that complies with the standards of the American Society for Nondestructive Testing (ASNT), and have at least 5 years' experience in building science applications with infrared photography. Two samples of a typical Infrared Thermographic test report done for previous projects by the Operator shall be provided for Government review.

Infrared (IR) cameras shall have thermal resolution, or sensitivity, $\leq .10^{\circ}\text{C}$ at 30°C target temperature (100 NETD) or better, with a field of view of at least $23^{\circ} \times 17^{\circ}$. Cameras should have manual focus capability with focus distance from 6" to infinity. The Camera Detector should be no less than 160x120 and provide a minimum 2.5mRad Spatial Resolution (IFOV). The IR camera should be equipped to automatically align (parallax correct) visual images, provide full IR view selections on camera, and be capable of IR blending in the manufacturer's software.

In support of IR testing, the architect shall clearly identify all air barrier components of each envelope assembly on construction documents and detail the joints, interconnections, and penetrations of the air barrier components. Apparent deficiencies in the air barrier discovered during the IR testing can be exposed and compared against the specified details.

Required conditions for Exterior IR testing are at least an 18° temperature differential between interior and exterior of building, limited solar radiation on building elevations prior to testing, wind speeds of less than 15 miles per hour, a dry exterior building surface, and positive interior pressure in the building to highlight air leaks to the exterior. Required conditions for Interior IR testing are at least an 18° temperature differential between interior and exterior of building and negative interior pressure to help highlight air leaks into the building.

Pressurization of the building will be used as part of the IR testing to differential of 25 to 75 Pa in accordance with ASTM E799 using either the building's mechanical system or "blower doors." A 12° Temperature differential between interior and exterior of the building is sufficient for exterior and interior IR testing with proper pressurization. Blower door or equivalent pressurization is the most effective way to test for leaks in the air barrier and shall be used for the initial testing of the building as outlined below.

Initial IR testing shall be performed when the building's air barrier and main HVAC systems are installed and operational but before final interior painting and finishes are complete. All thermal insulation shall be installed. Images should be taken for each exterior wall under required conditions as described above. Images of low slope roofs other than vegetated roofs shall be done to the greatest extent possible from above the roof surface; these images to be taken at least one hour after sunset or before full sunrise to negate effect of solar radiation. Images shall be taken of all multi-pane inert gas filled windows to determine if the inert gas has leaked, resulting in

a vacuum and thermal signature which can be seen from an IR image. Interior images shall be taken for each interior portion of the exterior wall, one or more images for each interior room depending the room's location in relation to exterior building corners. Interior images shall be taken from the greatest practical distance allowable from the wall plane as limited by room depth.

All areas identified by the IR images that appear to exhibit defects in insulation, defects in the air barrier, or possible moisture intrusion shall be investigated. This investigation shall consist of removing any installed materials that obscure potential problems, determining the cause of the IR image, and repair with new materials after correcting the problem. Windows that have lost their inert gas filling due to manufacturer defect or installation damage shall have the defective glass assembly replaced with full manufacturer's warranty on replacement. Areas where moisture problems are suspected should be further tested with a digital hand held moisture meter. The Contractor is required to provide all images and their interpretations by a skilled thermographer to the Government, and information on how defects are corrected.

After these deficiencies are corrected, thermographic IR images will be taken of the repaired areas under preferred conditions as described above. Any remaining defects must be corrected to the satisfaction of the Government prior to the Government taking occupancy of the building. The Contractor is required to provide images of these areas showing that the defects observed in the original IR images have been corrected.

2.3.4 Building Commissioning

Provide commissioning to meet requirements identified in UFGS Section 01 33 29.05 20 *Sustainability Requirements For Design-Build*, UFGS Section 01 45 00.05 20 *Design and Construction Quality Control*, and UFC 1-200-02 *High Performance and Sustainable Building Requirements*.

Enhanced Commissioning meeting the requirements of USGBC LEED rating System v4 and UFGS section 01 45 00.05 20, *Design and Construction Quality Control*, will be required for this project. The government will engage an independent 3rd Party Commissioning Authority (CxA) for this effort. The Design-Builder shall cooperate in coordination efforts with the 3rd Party CxA during the Post Award Phase and shall participate in commissioning activities including but not limited to: addressing Design review comments issued by the CxA; commissioning scoping meeting; Post Award Phase commissioning kick-off meeting and other selected commissioning team meetings; resolution of system design deficiencies identified during the commissioning effort (including deficiencies discovered during the commissioning follow-up conducted after the beneficial occupancy date); etc. as required for compliance with the requirements of USGBC LEED rating System v4 and UFGS section 01 45 00.05 20, *Design and Construction Quality Control*. At a minimum, the following systems will be Commissioned: HVAC systems and controls, lighting controls, and if provided, day lighting controls, refrigeration systems and controls, renewable energy systems, advanced meters for incoming utilities, and domestic hot water systems. See the following "Engineering System Requirements" (ESR) sections in Chapter 6 of the Project Program to determine any additional systems to be commissioned.

2.3.5 Accessibility Requirements

Provide barrier-free design in accordance with [UFC 1-200-01](#), *General Building Requirements*.

All general and public spaces are required to be handicap accessible. The BEQ sleeping units are not required to be handicap accessible given that sleeping quarters are for able-bodied civilian and military personnel.

Use the *ABA Standards* and the special provisions of the Department of Defense Deputy Secretary of Defense Memorandum *Subject: Access for People with Disabilities*, October 31, 2008.

2.3.6 Antiterrorism Criteria

Design the facility to comply with UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings. Provide design submittals called for in Section 1-11 of the UFC including an overall narrative and detailed technical submittals for those items that apply.

The MCESG Annex will be less than three stories and will not be required to meet the progressive collapse avoidance standards.

The MSAU HQ-BEQ will be greater than three stories and will be required to meet the progressive collapse avoidance standards contained in UFC 4-023-03, *Design of Buildings to Resist Progressive Collapse*. Provide design submittals demonstrating compliance to the UFC for this structure.

Facility is within a controlled perimeter.

Develop the site to provide the standoff requirements listed in UFC 4-010-01.

2.3.7 Secured Areas

The spaces within the MSAU HQ-BEQ Compartment Area Type 1 Perimeter (See Concept Plans A-101 and A-102 in Part 6) are to meet the construction requirements of SECNAV M-5510.36 exhibit 10A, Government approval, as well as any more stringent requirements identified within this RFP. All electrical systems, including raceways, shall be concealed in the finished spaces.

The following spaces shall be open secret storage: Office 134, Sgt. Open Office 134A, and other offices located within, and Squad Offices 1-10, and other offices located within. Refer to the RFP Part 3, Chapter 5 - Room Requirements to further define the secured area requirements.

The MSAU HQ-BEQ Multipurpose Room 108 is to meet the Physical Protection requirements of a Restricted Access Area (RAA) per Section 4 of USN/USMC IA PUB 5239-22, Government approval, as well as any other more stringent physical security requirements as identified within this RFP.

The MCESG Annex Communications Room 210 (See Concept Plan A-107 in Part 6) is to meet the construction requirements of SECNAV M-5510.36 exhibit 10A, Government approval, as well as any more stringent requirements identified within this RFP.

The MCESG Annex Building is to meet the Physical Protection requirements of a Restricted Access Area (RAA) per Section 4 of USN/USMC IA PUB 5239-22, Government approval, as well as any other more stringent physical security requirements as identified within this RFP.

2.4 Appropriate Design

Comply with the current version of UFC 4-721-10, *Navy and Marine Corps Bachelor Housing* for planning and design requirements at the time of award and the MCB Quantico Base Exterior Architectural Plan (BEAP).

Per UFC 1-200-01, *General Building Requirements*, comply with the Core UFCs and FCs listed in paragraph 3-2.1. Comply with the following Design Guides and References for planning and design requirements for this project.(Guidelines)

- FC 1-300-09N, Navy and Marine Corps Design Procedures, with Change 2
- UFC 3-320-06A, Concrete Floor Slab on Grade Subjected to Heavy Loads
- UFC 3-400-02, Design: Engineering Weather Data
- UFC 3-401-01 Mechanical Engineering
- UFC 3-410-01 Heating, Ventilating, and Air Conditioning Systems
- UFC 3-570-02A, Cathodic Protection
- UFC 3-580-01, Telecommunications Building Cabling Systems Planning and Design
- UFC 3-580-10, Navy and Marine Corps Intranet (NMCI) Standard Construction Practices, with Changes 1 – 3
- UFC 3-600-01, Fire Protection Engineering for Facilities, with Change 3
- UFC 4-010-01 DoD Minimum Antiterrorism Standards for Building, with Change 1
- UFC 4-010-02, DoD Minimum Antiterrorism Standoff Distances for Buildings
- UFC 4-021-01, Design and O&M: Mass Notification Systems, with Change 1
- UFC 4-021-02, Electronic Security Systems
- UFC 4-022-01, Security Engineering: Entry Control Facilities/Access Control Points
- UFC 4-215-01, Armories and Arms Rooms
- FC 4-721-10N Navy and Marine Corps Unaccompanied Housing
- MCB, Quantico Master Plan Update completed in 2001

- Quantico Emergency Services Building Design and Construction Requirements
- NFPA 101, Life Safety Code
- NFPA 13, Standard for the Installation of Sprinkler Systems
- NFPA 17A, Wet Chemical Extinguishing Systems
- NFPA 72, National Fire Alarm and Signaling Code
- NFPA 96, Ventilation Control and Fire Protection of Commercial Cooking Operations
- 2012 International Building Code (IBC)
- 2012 International Mechanical Code (IMC)
- 2012 International Plumbing Code (IPC)
- Navy Bureau of Medicine and Surgery P-5010 (BUMED P-5010)
- USGBC LEED V4
- ASHRAE Standard 15
- ASHRAE Standard 55
- ASHRAE Standard 62.1
- ASHRAE Standard 90.1
- ASHRAE Standard 189.1
- Energy Independence and Security Act (EISA) 2007
- Energy Policy Act of 2005 (EPACT 2005)

MCB Quantico is no longer on the NMCI network. All references to NMCI herein shall be replaced with Marine Corps Enterprise Network (MCEN).

2.5 Workflow Process

The main MSAU HQ-BEQ building entrance shall be located central to the facility. The Post 1 station and duty office shall be designed to support efficient resident and visitor check-in with direct visual access to the main entrance. The shared public areas of the building shall be centrally located on the first floor and in close proximity to vertical circulation. The duty office shall be located adjacent to public areas to provide monitoring as much as practical. The Post 1 station will have direct visual supervision at the main vestibule. Sleeping wings shall extend away from the central public areas equally as much as the design and site configuration will allow.

Restrooms are accessed from the corridor network.

The MCESG Annex building entrance shall be located central to the facility. The shared public areas of the building shall be centrally located on the first floor and second floor and in close proximity to vertical circulation. Restrooms are accessed from the corridor network.

2.5.1 Hours of Operation

Hours of operation shall be 24-hours a day, 7 days a week.

2.5.2 Staffing/Occupancy

The number of occupants specified in this RFP is identified for programming purposes. Occupancy used to design building features, such as structural, egress, and plumbing fixtures must be determined as required in applicable building or life safety codes.

2.6 Special Design Challenges

MCB Quantico is considered a controlled perimeter and all construction personnel and vehicles must undergo security checks to access the site.

This project is located immediately adjacent to ongoing MCESG campus construction.

This project requires significant electrical infrastructure upgrades, to include a new switching sub-station.

All Comm Room sizes shall be verified and adjusted as needed to fit equipment requirements.

Site grading around each building will impact the water table as delineated in the elevations. The Design Build Team shall account for water table heights exceeding 3'-0" which shall be designed and constructed with appropriate detailing including but not limited to, banding, paneling, insets, reveals, control joints, etc., of the water table to be in compliance with the BEAP.

2.7 Adaptability and Flexibility

Although no changes are anticipated for the facilities' missions in the near future; adaptability and flexibility of each facility shall be addressed post award during the design with the user to meet their programmatic functions.